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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,792	07/24/2001	Toshihiro Yoshioka	222181/00	3010

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EXAMINER
DONG, DALEI

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 01/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/910,792	YOSHIOKA ET AL.	
	Examiner	Art Unit	
	Dalei Dong	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *09/910,792* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to because in Figure 6A, component number 13 points to upper dielectric layer as suppose to lower dielectric layer. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On page 15, line 4, "lower dielectric layer 131" should be lower dielectric layer 13.

On page 20, line 11, "Figure 6A and 7B" should be Figure 6A and 6B.

On page 23, line 15, spaces are needed between "electrode121and".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 8-10 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,210,468 to Yoshioka.

Regarding to claims 1, 8-10 and 14-16, Yoshioka discloses in Figures 3A and 3B, "a glass substrate 1, a pair of aluminum seed discharge electrodes 2 each 0.05 mm wide are formed, defining seed discharge space therebetween, using vacuum evaporation and lithography techniques. An Al_2O_3 layer 3 is formed to 2 μm thick on electrodes. A pair of main discharge electrodes 4 of aluminum each of 0.2 mm wide is formed on the layer 3 to define a main discharge space therebetween and an Al_2O_3 layer 5 is formed on the main discharge electrodes 4 similarly on the layer 3. On the Al_2O_3 layer 5, a MgO layer 6 of 1 μm thick is formed. Then, on the layer 6, a partition wall 7, 0.25 mm high is formed using thick film techniques. Finally, a front glass 10 having a lower surface on which an aluminum write electrode 9 and an Al_2O_3 layer 12 are formed in that order, phosphor 8 is painted on the layer 12 adhered to the partition wall with a gap of 0.3 mm, and the gap is filled with discharge gas 11 of He-Xe (2%) mixture at 80 to 500 torr. Thus, an AC surface discharge type gas discharge display element is formed. In this case, the MgO layer 6 is used to reduce the discharge voltage since MgO has a high efficiency secondary electron emission when by bombarded ion, and the Al_2O_3 layer 5 is used to increase the breakdown voltage of the dielectric" (column 4, line 44-67).

Yoshioka further discloses in Figures 3A and 3B, "applying a 20 KHz AC pulse voltage 2 μsec wide from a power source 14 to the seed electrode 2 and a 20 KHz AC pulse voltage 0.2 to 5 μsec wide from a power source 13 to the main discharge electrodes

4" (column 5, line 13-16). As disclosed by Yoshioka, the upper and the lower electrodes can be at equipotential.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,210, 468 to Yoshioka.

Regarding to claims 2-7, Yoshioka discloses "instead of the construction shown in Figures 3A and 3B, a construction such as shown in Figures 4A and 4B can be used in which seed electrodes 2 are arranged such that electric field formed thereby is orthogonal to that formed by main discharge electrodes 4" (column 4, line 67-68 to column 5, line 1-4). In Figures 3A and 3B Yoshioka also discloses the upper and lower electrodes are formed symmetrically about the center of a first sustain gap, furthermore, in Figures 4A and 4B Yoshioka discloses the center of the first sustain gap is deviated from a center of second sustain gap. However, Yoshioka does not disclose upper electrodes provided in a plurality of different layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have add additional layers of electrodes within the dielectric layer

of Yoshioka in order to further enhance the discharge characteristics to obtain a higher discharge efficiency and lower the applied voltage of the discharge display.

7. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,210, 468 to Yoshioka in view of U.S. Patent No. U.S. Patent No. 5,428,263 to Nagano.

Regarding to claims 11-13, Yoshioka discloses a plasma display panel comprising a substrate having a plurality of electrode pairs covered by a dielectric layer and the upper and lower electrodes being connected at equipotential, moreover, a second substrate arranged in opposing relation and a discharge gas filling gap between the first substrate and the second substrate.

However, Yoshioka does not discloses connecting wiring for electrically connecting upper electrode and the lower electrode. Nagano teaches in Figure 12, a connecting electrodes 13 to connect the cathode pattern 12 and the terminal electrode 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilize the connecting electrode of Nagano to connect the upper and lower electrodes of Yoshioka in order to eliminate the problem in withstand voltage and to enhance the trigger effect and superior flexibility and conductivity of the electrodes.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior art are cited to further show state of the art of composition of a plasma display panel.

U.S. Patent No. 5,086,297 to Miyake.

U.S. Patent No. 5,541,479 to Nagakubo.

U.S. Patent No. 5,661,500 to Shinoda.

U.S. Patent No. 5,818,168 to Ushifusa.

U.S. Patent No. 5,883,462 to Ushifusa.

U.S. Patent No. 5,952,782 to Nanto.

U.S. Patent No. 6,084,349 to Ueoka.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D.D.
December 27, 2002

Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800